

**Remarks**

Applicants timely submit this response to the Examiner's Office Action of November 3, 2009. The Office Action has been carefully considered and the following remarks are made in response thereto.

In this Amendment, claims 1-4 have been cancelled. New claims 5-8 have been added to more clearly define the invention.

Support for "helical pieces have a helical shape on an entrance side of the rotor and an inverse helical shape on an extraction side of the rotor" in claim 5 can be found throughout the specification and at least at Paragraphs [0008] and [00011]. Paragraphs are numbered herein with reference to the printed publication, U.S. 2007/0274836 A1.

Support for "helical trapezoids of adjacent concentric tubular cylinders are mounted out of line" in claim 5 can be found throughout the specification and at least at Paragraph [0007].

Support for "the entrance side and the extraction side are each 50% of the length of the rotor" in claim 6 can be found throughout the specification and at least at Paragraphs [0008] and [00011].

Support for "outer perimeters of the helical trapezoids are shut down" in claim 8 can be found throughout the specification and at least at Paragraphs [0003] and original claim 1.

**I. Summary of the Office Action**

1. New Claims 5-8 will be pending upon entry of the attached amendment. Claims 1-4 are cancelled.

2. Claim 2 is rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.
3. Claims 1 and 3 are rejected under 35 USC § 102(b) as allegedly anticipated by U.S. Patent No. 5, 755,557 to Alizadeh.
4. Claims 1 and 4 are rejected under 35 USC § 102(b) as allegedly anticipated by U.S. Patent No. 3,198,423 to Clute.
5. Claim 2 is rejected under 35 USC § 103(a) as allegedly unpatentable over Clute in view of U.S. Patent No. 2,929,937 to Kroger.

## **II. Response to the Office Action**

### **1. Claim Rejections under 35 U.S.C. §112**

Claims 2 is cancelled. Applicant respectfully requests that the rejection be withdrawn.

### **2. Claim Rejections under 35 U.S.C. §102(b)**

Claims 1 and 3 are rejected under 35 USC § 102(b) as allegedly anticipated by U.S. Patent No. 5, 755,557 to Alizadeh.

Claims 1 and 3 are cancelled. Alizadeh does not teach helical pieces having a helical shape on an entrance side of a rotor and an inverse helical shape on an extraction side of a rotor. Alizadeh teaches blades having leading and trailing edges curved in the same sense with respect to fan rotation, known as “dual backward skew.” Alternatively, the blades can have “dual forward skew.” Alizadeh also teaches that inner and/or outer blades can be curved either in the same sense or in an opposite sense to fan rotation. But Alizadeh does not teach that one

blade has both forward and backward skew. See Alizadeh Column 5, lines 15-30 and Figs. 1-3 (showing a dual backward skew) and Figs. 7-9 (showing a dual forward skew arrangement). Compare Alizadeh to the instant specification at paragraphs [0008] and [0011]. (paragraphs numbered according to the printed publication, US 2007/0274836 A1). These paragraphs are discussed by way of example, and not by way of limitation. "Helical pieces in round honeycomb rotors in general have two completely opposite functions: its helical shape and progress giving entrance to liquids and gases and in the case of a round honeycomb pump to solids and granules, represent the 50% of its performance. The other 50% of the helical piece in its inverse helical shape behaves like an extractor which under extremely high revolutions will produce a great pressure being very important for the good functioning of round honeycomb rotors in general, outboard motors and compressors." Paragraph [0008]. "FIG. 2 shows tubular cylinders in progress (2) with helical pieces in progress (3) having 12, 9 and 6 elements respectively and shaping the helical tubular trapezoids where spotheight A represents the 50% of progress giving entrance to gases or solids in round honeycomb pumps, while spotheight B represents the other 50% when used as an extractor due to its reverse helical shape." Paragraph [0011].

Applicant respectfully requests that the rejection be withdrawn.

Claims 1 and 4 are rejected under 35 USC § 102(b) as allegedly anticipated by U.S. Patent No. 3,198,423 to Clute.

Claims 1 and 4 are cancelled. Clute does not disclose that the helical trapezoids of adjacent concentric tubular cylinders are mounted out of line. Quite the contrary, Clute

discloses “As shown in FIGS. 1 and 2, there is a blade 40 for each blade 36 respectively, each blade 40 being superimposed on its corresponding blade 36 so as to be a radial extension thereof.” Clute, column 3, lines 33-36 (emphasis added).

Applicant respectfully requests that the rejection be withdrawn.

**3. Claim Rejections under 35 U.S.C. §103(a)**

Claim 2 is rejected under 35 USC § 103(a) as allegedly unpatentable over Clute in view of U.S. Patent No. 2,929,937 to Kroger.

Claim 2 is cancelled. Applicant respectfully requests that the rejection be withdrawn.

**III. Conclusion.**

Applicants respectfully assert that the above-referenced application is in condition for allowance. Reconsideration and withdrawal of the outstanding rejections and early notice of allowance to that effect is respectfully requested.


**EXCEPT** for issue fees payable under 37 C.F.R. § 1.118, the Director is hereby authorized by this paper to charge any additional fees during the entire pendency of this application, including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 13-3250, reference No. 38548.00200. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F. R. § 1.136(a)(3).

If the Examiner finds that a telephone conference would further prosecution of this application, the Examiner is invited to contact the undersigned at 202-835-7525.

Respectfully submitted,  
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